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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/862,374	05/22/2001	Yuzuru Suzuki	SUM-02201	8694

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PATENT GROUP
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EXAMINER

AGUIRRECHEA, JAYDI A

ART UNIT PAPER NUMBER

2834

DATE MAILED: 11/04/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/862,374

Applicant(s)

SUZUKI ET AL.

Examiner

Jaydi A. Aguirrechea

Art Unit

2834

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 September 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 and 15-20 is/are pending in the application.
- 4a) Of the above claim(s) 11-14 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 and 15-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 May 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of claims 11-14 in Paper No. 7 is acknowledged.

Drawings

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference sign(s) not mentioned in the description: "7" and "8". A proposed drawing correction, corrected drawings, or amendment to the specification to add the reference sign(s) in the description, are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-4, 6, 10, 15-16 are rejected under 35 U.S.C. 102(b) as being anticipated by Suzuki et al (US 6049151).

Suzuki discloses an electromagnetic actuator comprising:

a stationary assembly (13) that includes two coils (16) disposed coaxially (as shown in Figure 2) with each other inside a hollow stator yoke (14, 15) composed of a soft magnetic material (Column 3, 18-25); and

a movable assembly (6) that includes a movable magnet unit (8) and movable yoke unit both disposed inside the coils with a very small clearance therefrom so as to be movable in the axial direction,

wherein the movable assembly travels in the axial direction by the interaction between a magnetic field generated by the movable magnet unit and a current passing through the coils (Abstract and Column 3, lines 40-45).

5. With regards to claim 2, Suzuki et al. disclose the direction of the current passing through one of the two coils is opposite from the direction of the current passing through the other coil (Column 3, lines 58-60).

6. With regards to claim 3, Suzuki et al. disclose an actuator wherein the two coils are wound on respective separate bobbins made of a synthetic resin (Column 3, lines 20-25) and having a substantially identical shape with each other, and the two bobbins with the respective coils wound thereon are disposed axially inside the stator yoke with a predetermined distance provided therebetween (See Figure 2).

7. With regards to claim 4, Suzuki et al. disclose the stator yoke of the stationary assembly being a hollow cylinder and the movable assembly having a supporting shaft at the center.

8. With regards to claim 6, 10, 15-16 Suzuki et al. teach the structure as claimed.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

10. Claims 5, 7-9 and 17-20 rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki et al. (US 6049151) in view of Frandsen (US 4868432).

Suzuki et al. disclose an electromagnetic actuator as disclosed above.

However, it fails to disclose the magnetization and dimensions of the outer diameter of the movable magnet unit of the movable.

Frandsen teaches the permanent magnets arranged oppositely-poled for the purpose of balancing the flux flow symmetrically and allowing return flux to be put to work.

It would have been obvious to one skilled in the art at the time the invention was made to use the magnets arrangement disclosed by Frandsen on the structure disclosed by Suzuki for the purpose of balancing the flux flow symmetrically and allowing return flux to be put to work.

11. With regards to claims 7, 8, 17, 18 and 19 the combination of Frandsen and Suzuki et al. discloses the claimed invention. Frandsen teaches the dimensions of the magnets, their materials, the coils length, number of turns and current being a matter of choice as well known in the art (Column 5, lines 65-69).

12. With regards to claims 9 and 20, the combination of Frandsen and Suzuki et al. discloses the claimed invention except for the travel distance of the movable assembly in the axial direction. It would have been obvious to one having ordinary skill in the art at the time the invention was made to set the distance to 1.0 mm or less, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.

Conclusion


13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. See PTO-892.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jaydi A. Aguirrechea whose telephone number is 703-305-2277. The examiner can normally be reached on M-Th 9-7.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor Ramirez can be reached on 703-308-1371. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-1341 for regular communications and 703-305-3432 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

JAA
October 31, 2002


JAYDI A. AGUIRRECHEA
EXAMINER
ART UNIT 2834
OCT 31 2002